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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/778,478	02/07/2001	Carlo Amalfitano	TAN-2-1473.01.US	4704
24374 7590 09/15/2009 VOLPE AND KOENIG, P.C. DEPT. ICC UNITED PLAZA, SUITE 1600 30 SOUTH 17TH STREET PHILADELPHIA, PA 19103				
EXAMINER				
TSEGAYE, SABA				
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2419				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

09/778,478

**Applicant(s)**

AMALFITANO, CARLO

**Examiner**

SABA TSEGAYE

**Art Unit**

2419

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 May 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 25, 27, 29-32, 34 and 36-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 25, 27, 29-32, 34 and 36-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/C)
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Amendment***

1. This Office Action is in response to the amendment filed 05/15/09. Claims 25, 27, 29-32, 34 and 36-38 are pending. Currently no claims are in condition for allowance.

***Claim Rejections - 35 USC § 103***

2. Claims 25, 29-32 and 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hou et al. (US 6,324,184 B1) in view of Otis (6,085,241).

Regarding claims 25 and 32, Hou discloses a method for use in a base station (fig. 5) for providing multiple grades (“**weighing factor**”; see col. 1 lines 10-31) of service to a plurality of subscriber units requesting traffic channels (the invention is equally suitable for use with wireless network; column 3, lines 56), the method comprising:

detecting a request from a plurality of subscriber units to transmit data to or receive data from the base station using a plurality of traffic channels (**central controller 210 allocates bandwidth on the transmission path 220 to manage communications between the subscriber units and the central controller. Path 220 may comprise one or more channels shared among the subscriber units; for example see col. 3, lines 62-67**); and

assigning a priority level for reach of the detected requests, the priority level being associated with the subscriber unit transmitting the request, wherein the priority level of the subscriber unit depends on the priority level of all inactive users and on subscriber unit’s historical usage of the base station resources (**the MAC management entity may maintain a historical record of bandwidth usage for each user. Then, users who have relatively low usage levels may be given higher priority when requesting a bandwidth level that might**

**otherwise be limited; col. 11, lines 50-60. Bandwidth can optionally be allocated according to a user hierarchy, wherein premium user can be granted priority over other users; col. 11, line 61-col. 12, line 7);**

comparing the priority level for each of the subscriber unit against a threshold **(a maximum (e.g., ceiling) bandwidth can be imposed on the user (column 11, lines 46-47));**  
and

allocating at least one traffic channel to each of the subscriber units requesting to transmit data to or receive data from the base station based on the priority level of the subscriber unit **(the MAC management entity may maintain a historical record of bandwidth usage for each user and the MAC management entity may further allocate bandwidth according to historical profile of total channel bandwidth usage. The system also, maintains a minimum bandwidth for each subscriber unit; and maintains a count of the number of active users on each channel; for example see col. 8, lines 7-14 and col. 9, lines 1-7), wherein a subscriber unit with a lower priority level is allocated fewer traffic channels than a subscriber unit assigned a higher priority level (the size and number of the slots corresponds to a bandwidth, so that C(f) corresponds to a bandwidth which is consumed by the user (column 9, lines 35-60). A lower priority level is allocated less bandwidth (that is time slot/ frame, super frame, or the like)).** Further, Hou disclose assigning bandwidth of subscriber units according to the traffic count. Additionally assigned bandwidth may be based on a subscriber unit bandwidth usage history, **time of date, or other factors.** Furthermore, it is possible to use **a timing mechanism to provide a heavy user with additional bandwidth, by only for a certain amount of time** (column 11, lines 47-55).

However, Hou does not expressly disclose a time threshold and adjusting the priority level when the time threshold is exceeded.

Otis teaches that limiting maximum bandwidth allocations to particular connections that maintain and excessive connection bandwidth over **a prolonged period** such that a single connection cannot **abuse the overall** connection bandwidth of the system to the charging of other connections (column 7, line 60-column 8, line 8).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a time threshold, such as that suggested by Otis, in the system of Hou in order to increase flexibility and to share resources efficiently and effectively.

Regarding claims 29 and 36, Hou discloses wherein the subscriber unit is assigned a higher priority level when the subscriber unit's historical usage is lower than the threshold (**users who have relatively low usage levels may be given higher priority when requesting a bandwidth level that might otherwise be limited; col. 11, lines 50-60**).

Regarding claims 30 and 37, Hou discloses wherein the higher priority level results in the subscriber unit being allocated more traffic channels than a subscriber unit assigned a lower priority level (**users who have relatively low usage levels may be given higher priority when requesting a bandwidth level that might otherwise be limited; col. 11, lines 50-60; ... bandwidth corresponds to a number of slots (or frames, or super-frames, or the like) which are allocated to a subscriber; column 9, lines 38-44; lines 55-60**).

Regarding claims 31 and 38, Hou discloses reserving at least one traffic channel for subscriber units having the lowest priority level; and creating a queue of detected requests from subscriber units with the lowest priority level to ensure that subscriber units with the lowest priority level are allocated the at least one traffic channel at predetermined times (**see fig. 5; the system maintains a minimum bandwidth (time slot) for each subscriber unit; and maintains a count of the number of active users on each channel; see col. 8, lines 7-14 and col. 9, lines 1-7**) .

3. Claims 27 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hou et al. in view of Otis as applied to claims 25 and 32 above, and further in view of Dillon et al. (US 6,473,793).

Hou in view of Otis discloses all the claim limitations as stated above. Further, Hou discloses that there may be a concern that the dynamic bandwidth allocation scheme never reduces the assigned bandwidth of a user when the user continually uses all of its assigned bandwidth. In this case some of the bandwidth assignment of user in question can be redistributed to other users who use all or most of their assigned bandwidth. The MAC management entity may maintain a historical record of bandwidth usage for each user. Then the users who have relatively low usage levels may be given higher priority. In addition, Hou discloses that a timing mechanism can be used for certain amount of time (col. 11, lines 36-60). However, Hou does not expressly disclose that if the previous historical usage by the user is higher than the threshold, the user is assigned a lower priority level for transmitting data information.

Dillon teaches that historically low data throughput users can get high data throughput volumes on a periodic based, while historically high data throughput users are throttled when they abuse system resources. To implement throttling based on historical usage patterns, a hybrid gateway compares the thresholds defined for a requesting terminal's level of service and its measures running average data throughput to determine if the requesting terminal's bandwidth should be reduced (throttled) ( see col. 16, lines 19-24; line 59-col. 17, line 29).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hou's apparatus to assign a user a lower priority level, as taught by Dillon in order to ensure that historically low data throughput users can get high data throughput volumes on a periodic basis, while historically high data throughput users are throttled when they abuse the system resources and to provide a system that ensure fair access to the appropriate level of system resources contracted for each subscriber as explained by Dillon on col. 1, lines 54-55.

#### ***Response to Arguments***

4. Applicant's arguments filed 05/15/09 have been fully considered but they are not persuasive. Applicant argues (Remarks, page 9) that *"Hou fails to teach comparing a continuous time allocation of channel resources for each of the subscriber unit against a time threshold and adjusting the priority level when the time threshold is exceeded"*. It is respectfully submitted that the rejection is based on the combined teaching of Hou reference and the Otis reference. Hou discloses that assigning bandwidth of subscriber units according to the traffic count. Additionally assigned bandwidth may be based on a subscriber unit **bandwidth usage history, time of date, or other factors**. As shown in Fig 4, a flowchart of bandwidth allocation scheme that includes

**upper and lower thresholds.** The bandwidth can be allocated (adjusted) for each user in each channel in successive control intervals. Control intervals are time increments which may be synchronized with a number of slots, frames, and/or super frames of a channel. Moreover, the control interval may be adjusted so that control intervals of differing durations are provided in single channel or multiple channels (Abstract; column 9, line 8-column 10, line 61). In addition, Hou discloses a subscriber unit **hierarchy** may be used to grant priority to selected users and assigned bandwidth for the subscriber unit may be determined according to a **subscriber unit hierarchy**. Otis teaches that limiting maximum bandwidth allocations to particular connections that maintain and excessive connection bandwidth over a **prolonged period** (*a continuous time*) such that a single connection cannot **abuse the overall** connection bandwidth of the system to the charging of other connections (column 7, line 60-column 8, line 8).

Applicant, further, argues that Hou also fails to teach “*detecting a request from a plurality of subscriber units to transmit data to or receive data from the base station using a plurality of traffic channel.*” Examiner respectfully disagrees. As shown in figs. 2 and 5, Hou discloses a bi-directional communication network that a plurality of subscriber unit to transmit or receive data from the base station using a plurality of traffic channels.

Applicant argues that Otis does not teach a timing threshold that is used to adjust the priority level of a subscriber unit when the threshold is exceeded. Examiner respectfully disagrees. Otis teaches that “...fixed slew rates are used to consume available bandwidth. The slope of this slew establishes priority among the various customers...” (Column 6, lines 56-65). Hou, also, discloses a subscriber unit **hierarchy** may be used to grant priority to selected users



and assigned bandwidth for the subscriber unit may be determined according to a **subscriber unit hierarchy**.

Applicant argues (Remarks, page 10) that unlike Dillon the pending claims measure the overuse of channel resources based on the continuous allocation the channel resources. It is respectfully submitted that the rejection is based on the combined teaching of the Hou reference, Otis reference and the Dillon reference, and that the Hou and Otis references, as point out above does teach this feature. Examiner believes that the claims, given their broad reasonable interpretation, read on the references applied.

***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SABA TSEGAYE whose telephone number is (571)272-3091. The examiner can normally be reached on Monday-Friday (7:30-5:00), First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pankaj Kumar can be reached on (571) 272-3011. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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